

What is claimed is:

1. A patch for controlled topical or transdermal delivery of effective levels of cosmetic, dermatological, or pharmaceutical active ingredients onto the skin, hair follicles, or sebaceous glands comprising a single polymeric matrix layer.

2. The patch according to claim 1 wherein the polymeric matrix layer comprises a bioadhesive water-soluble film forming polymer.

3. The patch according to claim 1 wherein the polymeric matrix layer comprises one or more materials selected from the group consisting of a carbohydrate, starch, starch derivatives, starch hydrolyzate, modified starches, modified starch derivatives, hydroxyalkyl starches, hydroxypropyl cellulose, maltodextrins, polyvinyl alcohol, cellulose derivatives, polysaccharide gums and their derivatives, polyethylene glycol, water soluble acrylics, water soluble polyesters, polyvinyl pyrrolidone, polyvinyl pyrrolidone cellulose derivatives, casein, gelatin, solubilized proteins, polyacrylamide, polyamines, polyquaternary amines, styrene maleic anhydride (SMA) resins, polyethylene amine and a combination thereof.

4. The patch according to claim 1 wherein the polymeric matrix layer comprises one or more materials selected from the group consisting of polyvinyl alcohol, polyvinyl pyrrolidone, modified starch derivatives and hydrolyzed starches and a combination thereof.

5. The patch according to claim 1 further comprising one or more of said cosmetic, dermatological, and pharmaceutical active ingredients uniformly distributed throughout the polymeric matrix layer.

6. The patch according to claim 1 further comprising one or more of said cosmetic, dermatological, or pharmaceutical active ingredients which are selected from the group consisting of anti-oxidant; free radical scavenger; moisturizer; depigmentation agent; liporegulator; reflectant; humectant; antimicrobial agent; allergy inhibitor; anti-acne agent; anti-aging agent; anti-wrinkling agent; antiseptic agent; analgesic;

antitussive; antipruritic; local anesthetic; anti-hair loss agent; hair growth promoting agent; hair growth inhibitor agent; anti-dandruff agent; antihistamine; keratolytic agent; anti-inflammatory agent; freshener; healing agent; anti infective; inflammation inhibitor; anti-emetic; anticholinergic; vasoconstrictor; vasodilator; wound healing promoter;

5 peptide, polypeptide; protein; deodorant; antiperspirant; skin emollient; skin moisturizer; softener; hair conditioner; hair softener; hair moisturizer; tanning agent; skin lightening agent; antifungal; depilating agent; external analgesic; counterirritant; hemorrhoidal; insecticide; poison ivy treatment agent; poison oak treatment agent; burn treatment agent; anti-diaper rash agent; prickly heat agent; make-up preparation; vitamin; amino acid;

10 amino acid derivative; herbal extract; retinoid; flavoid; sensory marker; anti-oxidant; skin conditioner; hair lightener; chelating agent; cell turnover enhancer; coloring agent; sunscreen; anesthetic; immunomodulator, nourishing agent; moisture absorber; sebum absorber and mixtures thereof.

15 7. The patch according to claim 1 further comprising one or more anti-septic agents selected from the group consisting of triclosan povidone, iodine, resorcinol, phenoxy, isopropanol and chlorhexidine.

20 8. The patch according to claim 1 further comprising one or more anti-microbial agents selected from the group consisting of erythromyxin, tetracycline, cephalosporin and clindamycin.

25 9. The patch according to claim 1 further comprising a keratolytic agent of salicylic acid.

10. The patch according to claim 1 further comprising one or more topical antiseptic selected from the group consisting of iodine, mercury, silver, phenol, and nitrofurazone and combinations thereof.

30 11. The patch according to claim 1 further comprising an anti-inflammatory agent chosen from the group consisting of aspirin and ibuprofen.

12. The patch according to claim 1 further comprising an anti-irritant composition selected from the group consisting of an antihistamine and calamine.

13. The patch according to claim 1 further comprising a counter-irritant composition selected from the group consisting of capsaicin, menthol, and clove oil.

14. The patch according to claim 1 further comprising a moisturizer.

15. The patch according to claim 14 further comprising one or more moisturizers selected from the group consisting of aloe, Tanolin, glycerin, mineral oil, and combinations thereof.

16. The patch according to claim 1 further comprising one or more of said cosmetic, dermatological, and pharmaceutical active ingredients encapsulated in nanospheres or microspheres.

17. The patch of claim 1 further comprising a permeation enhancer.

18. The patch of claim 1 further comprising one or more of said pharmaceutical active ingredients selected from the group consisting of an anti-inflammatory analgesic agent, a steroidal anti-inflammatory agent, an antihistamine, a local anesthetic, a bactericide, a disinfectant, a vasoconstrictor, a hemostatic, a chemotherapeutic drug, an antibiotic, a keratolytic, a cauterizing agent, an antiviral drug, and a combination thereof.

19. The patch according to claim 1 wherein said matrix is transparent.

20. The patch according to claim 1 wherein said matrix has a color.

21. A patch according to claim 1 further comprising a solubilizer selected from the group consisting of glycerol, propylene glycol, polyalcohols, sorbitol and sorbitol derivatives.

22. The patch of claim 1 further comprising an anti-aging active agent.

23. The patch of claim 1 further comprising a depigmentation active agent.

24. The patch of claim 1 further comprising an anti-acne agent.

25. The patch of claim 1 further comprising a tanning agent of dihydroxyacetone.

5 26. The patch according to claim 1 further comprising an effervescent agent selected from the group consisting of sodium bicarbonate and sodium carbonate.

10 27. A patch according to claim 1 further comprising at least one active ingredient having an effect on the skin from the group consisting of anti-oxidants, free radical scavengers, moisturizers, depigmenting agents, liporegulators, anti-acne agents, anti-dandruff agents, anti-aging agents, softeners, anti-wrinkle agents, keratolytic agents, anti-inflammatory agents, fresheners, healing agents, vascular protectors, antibacterial agents, antifungal agents, antiperspirants, deodorants, skin conditioners, anesthetics, immunomodulators and nourishing agents, moisture absorbers, and sebum absorbers.

15 28. The patch according to claim 1 having a size in the range of about 1 cm² to about 30 cm², and a shape to match the shape of a region to be treated.

20 29. The patch according to claim 1 wherein the polymeric matrix layer has a thickness from about 0.0001 mm to about 1.0 mm.

30 30. A method for treating the skin comprising the step of:
applying to a surface of the skin to be treated the patch according to claim 1.

35 31. The method of claim 30 further comprising the step of:
moistening a surface of the skin before the step of applying the patch.

40 32. The method of claim 30 wherein said patch further comprises at least one active ingredient having an effect on the skin from the group consisting of anti-oxidants, free radical scavengers, moisturizers, depigmenting agents, liporegulators, anti-acne agents, anti-dandruff agents, anti-aging agents, softeners, anti-wrinkle agents, keratolytic agents, anti-inflammatory agents, fresheners, healing agents, vascular protectors, antibacterial agents, antifungal agents, antiperspirants, deodorants, skin conditioners, anesthetics, immunomodulators and nourishing agents, moisture absorbers, and sebum absorbers.

✓ 33. A method for adhering a patch onto the skin, hair follicles or sebaceous glands comprising the steps of:

- 5 wetting an area of said skin hair follicles or sebaceous glands; and
affixing the patch to the skin, hair follicles or sebaceous glands, said patch comprising a water soluble polymeric matrix layer.

34. The method of claim 33 wherein said patch further comprises one or more of said cosmetic, dermatological, or pharmaceutical active ingredients which are selected
10 from the group consisting of anti-oxidant; free radical scavenger; moisturizer; depigmentation agent; liporegulator; reflectant; humectant; antimicrobial agent; allergy inhibitor; anti-acne agent; anti-aging agent; anti-wrinkling agent; antiseptic agent; analgesic; antitussive; antipruritic; local anesthetic; anti-hair loss agent; hair growth promoting agent; hair growth inhibitor agent; anti-dandruff agent; antihistamine;
15 keratolytic agent; anti-inflammatory agent; freshener; healing agent; anti infective; inflammation inhibitor; anti-emetic; anticholinergic; vasoconstrictor; vasodilator; wound healing promoter; peptide, polypeptide; protein; deodorant; antiperspirant; skin emollient; skin moisturizer; softener; hair conditioner; hair softener; hair moisturizer; tanning agent; skin lightening agent; antifungal; depilating agent; external analgesic; counterirritant;
20 hemorrhoidal; insecticide; poison ivy treatment agent; poison oak treatment agent; burn treatment agent; anti-diaper rash agent; prickly heat agent; make-up preparation; vitamin; amino acid; amino acid derivative; herbal extract; retinoid; flavoid; sensory marker; anti-oxidant; skin conditioner; hair lightener; chelating agent; cell turnover enhancer; coloring agent; sunscreen; anesthetic; immunomodulator, nourishing agent; moisture absorber;
25 sebum absorber and mixtures thereof.

35. A method of using a patch comprising the step of:

- 30 applying a patch to the skin, hair follicles or sebaceous glands for a period of application in a range of about one minute to about 12 hours, said patch comprising a water soluble polymeric matrix layer.

36. The method of claim 35 wherein said patch further comprises one or more of said pharmaceutical active ingredients selected from the group consisting of an anti-inflammatory analgesic agent, a steroidal anti-inflammatory agent, an antihistamine, a local anesthetic, a bactericide, a disinfectant, a vasoconstrictor, a hemostatic, a
5 chemotherapeutic drug, an antibiotic, a keratolytic, a cauterizing agent, an antiviral drug, and a combination thereof.

37. The patch according to claim 1 wherein said patch further comprises a detachable protective layer.

38. The patch of claim 1 further comprising encapsulated active ingredients dispersed in said polymeric matrix layer.

39. The patch of claim 38 wherein said encapsulated active ingredients are
15 microspheres or nanospheres.

40. The patch of claim 39 wherein said microspheres or nanospheres are formed of a hydrophobic material.

41. The patch of claim 39 wherein said microspheres or nanospheres are
20 homogeneously dispersed in said polymeric matrix layer.

42. A patch for controlled topical or transdermal delivery of effective levels of cosmetic, dermatological, or pharmaceutical active ingredients onto the skin, hair
25 follicles, or sebaceous glands comprising a polymeric water-soluble matrix layer which comprises one or more materials selected from the group consisting of polyvinyl alcohol, polyvinyl pyrrolidone, modified starch derivatives and hydrolyzed starches and a combination thereof and one or more of said cosmetic, dermatological, and
30 pharmaceutical active ingredients uniformly distributed throughout the polymeric water-soluble matrix layer.